

1 1. A method, performed in a web-based environment on a computer system, of helping a
2 user learn to implement an application, the method comprising:
3 providing a predetermined plurality of applications;
4 presenting an annotation page that includes one or more annotations descriptive of a
5 source file of a predetermined application, each annotation including keyword links,
6 annotation links, and detail of implementation of the application;
7 permitting the user to select a link in an annotation;
8 if the user selects a keyword link, presenting reference documentation associated with
9 that keyword; and
10 if the user selects an annotation link, presenting another annotation descriptive of
11 another source file of a predetermined application.

1 2. The method of claim 1 further comprising performing a predetermined application
2 and presenting one or more annotations descriptive of the performed application in
3 coordination with performance of the predetermined application.

1 3. The method of claim 2 in which performing the predetermined application comprises
2 receiving input from the user.

1 4. The method of claim 3 further comprising presenting another annotation page in
2 coordination with performance of the predetermined application based on input from the
3 user.

1 5. The method of claim 4 in which presenting another annotation page comprises:
2 automatically and simultaneously calling an annotation request module including
3 application, file, class and function names of a program unit for which detail should be
4 displayed;
5 mapping the request to an annotation; and
6 informing a browser window in the web-based environment to display the other
7 annotation page.

1 6. The method of claim 3 in which another annotation page is presented in coordination
2 with performance of the predetermined application.

1 7. The method of claim 6 further comprising automatically generating a global table of
2 contents comprising links to annotations by parsing structured links in web pages including
3 annotation pages.

1 8. The method of claim 7 in which the links in the global table of contents are
2 synchronized with presented annotations by highlighting links corresponding to a current
3 annotation page.

1 9. The method of claim 8 in which the global table of contents is presented in a first
2 frame of a first browser window, the annotation page is presented in a second frame of the
3 first browser window, and the predetermined application is performed in a second browser
4 window.

1 10. The method of claim 2 in which performing the predetermined application comprises
2 launching a Java applet or application.

1 11. The method of claim 10 in which launching the Java applet or application comprises
2 calling a Java application programming interface to ask a web browser to show the
3 annotation page.

1 12. The method of claim 2 in which performing the predetermined application comprises
2 downloading a hyper-text markup language page containing a Java applet.

1 13. The method of claim 2 in which performing the predetermined application comprises
2 sending a common gateway interface request to a web server that launches the application in
3 a window in the web-based environment.

1 14. The method of claim 13 in which the application returns a hyper-text markup
2 language page that includes JavaScript to ask a web browser to display the one or more
3 annotations.

1 15. The method of claim 2 in which the annotation page is presented in a first browser
2 window and the predetermined application is performed in a second browser window.

1 16. The method of claim 1 in which application implementation detail includes text
2 descriptive of the application, fragments of source code from the application, or both.

1 17. The method of claim 16 in which source code fragments are imported directly from
2 the source code file of the presented application.

1 18. The method of claim 1 further comprising automatically generating the annotation
2 page descriptive of the source code file of a predetermined application.

1 19. The method of claim 18 in which generating the annotation page comprises:
2 receiving a source code file that has embedded text marked up with instructions;
3 parsing the source code to determine a structure of the predetermined application; and
4 generating one or more annotations based on the predetermined application structure
5 and instructions.

1 20. The method of claim 19 in which generating the annotation page comprises:
2 generating one or more annotation links for navigating the annotations of the
3 predetermined application;
4 generating application implementation detail based on the embedded information; and
5 generating one or more keyword links for reference documentation.

1 21. The method of claim 20 in which generating the annotation page comprises
2 highlighting the keyword links and the annotation links in the annotation page.

1 22. The method of claim 19 further comprising automatically updating the annotation
2 page descriptive of the source code file of the predetermined application when an updated
3 source code file is received.

1 23. The method of claim 1 further comprising automatically generating a global table of
2 contents by parsing the plurality of annotations for annotation links.

1 24. The method of claim 23 further comprising providing the global table of contents, in
2 which the global table of contents comprises links to annotations.

1 25. The method of claim 23 further comprising generating a local table of contents, in
2 which the local table of contents comprises links to web pages including annotation pages
3 relating to an application.

1 26. The method of claim 25 further comprising providing the local table of contents when
2 a local link in the global table of contents is selected.

1 27. The method of claim 1 in which the presented annotation page is descriptive of the
2 performed application and the annotation page is presented in coordination with performance
3 of the predetermined application.

1 28. The method of claim 1 further comprising:
2 generating a source code file stripped of annotation mark up, the generated source
3 code file including source code of the application but not including text from the annotations;
4 presenting the stripped source code file; and
5 permitting the user to edit the stripped source code file.

1 29. A method, performed in a web-based environment on a computer system, of teaching
2 user to implement an application, the method comprising:
3 providing a predetermined plurality of applications;

4 performing a predetermined application; and
5 presenting an annotation page descriptive of a performed application in coordination
6 with performance of the predetermined application, the annotation page including detail of
7 application implementation and links to annotations and reference documentation.

1 30. A method, performed in a web-based environment on a computer system, of teaching
2 a user to implement an application, the method comprising:

3 automatically assembling a global table of contents based on content in the
4 environment, the global table of contents including a plurality of links to content within the
5 environment;

6 providing the global table of contents;

7 generating a local table of contents that includes links to content that orient the user
8 within a local topic; and

9 permitting the user to select links from the local table of contents to access local
10 topics.

1 31. A method, performed in a web-based environment on a computer system, of teaching
2 a user to implement an application, the method comprising:

3 providing a plurality of predefined interactive examples;

4 performing one or more of the predefined interactive examples in response to user
5 selection;

6 presenting one or more annotations descriptive of the performed interactive example
7 in coordination with performance of the predefined interactive example; and

8 allowing the user to selectively explore different aspects of the performed interactive
9 example, the annotations, or both.

1 32. A web-based computer system for teaching a user to implement an application, the
2 system comprising:

3 one or more predefined interactive applications, a predefined interactive application
4 selectively executable by the user of the web-based computer system; and

5 an annotation page including one or more annotations, in which the annotation page
6 describes a predefined interactive application, and the annotation page further includes:

7 one or more links, and

8 detail of implementation of the application,

9 in which different annotations are automatically provided in the annotation page in
10 response to selective execution of a predefined interactive application.

1 33. The system of claim 32 further comprising a utility through which the user can access
2 source code associated with a predefined interactive application.

1 34. The system of claim 33 in which the utility enables the user to view or copy a
2 predefined interactive application's source code.

1 35. The system of claim 32 in which detail of implementation of the application
2 comprises text descriptive of the application, fragments of source code associated with the
3 application, or both.

1 36. The system of claim 32 in which a link comprises a keyword link that provides the
2 user with access to a body of reference documentation or an annotation link that provides the
3 user with access to another annotation page.

1 37. The system of claim 32 further comprising a web-browser window that includes a
2 framework that comprises:

1 a content frame that displays the annotations;

2 a framework applet that displays a navigation bar; and

3 a table of contents frame that displays a table of contents hierarchy of links.

1 38. The system of claim 37 in which the framework applet comprises a Java applet.

1 39. The system of claim 37 in which a Java Script automatically determines whether the
2 framework is present in the web browser window, and if the framework is present, notifies
3 the framework applet about the content in the framework.

1 40. The system of claim 39 in which the table of contents automatically highlights a link
2 in the hierarchy based on the content in the framework.

1 41. The system of claim 40 in which the user accesses an annotation page by selecting a
2 link in the table of contents hierarchy.

1 42. The system of claim 40 in which the user accesses an annotation page by interacting
2 with the navigation bar.

1 43. The system of claim 40 in which the table of contents highlights the hierarchy based
2 on an annotation page displayed in the content frame.

1 44. The system of claim 37 in which the table of contents is dismissible or resizable.

1 45. A web-based computer system for teaching a user to implement an application, the
2 system comprising:

3 a web-browser window that includes a content frame, a framework applet, and a table
4 of contents frame that displays a global table of contents hierarchy of links related to content
5 in the content frame;

6 one or more annotations displayed in the content frame, each annotation describing a
7 predefined interactive application and including links to other content; and

8 a table of contents window that displays a local table of contents hierarchy of links
9 related to local content in the displayed annotation.